DNA Gel Electrophoresis

Rationale:	
Special Observations:	
Results:	
Interpretation:	

Experiment Date:
Experiment Time:

Source: Rafael, Nathan Kruer-Zerhusen, Dujduan Waraho

Primary Experimenter (contact):
Other Experimenters:
Image Filename:

Assembled: 6/27/2012

Reagent	Details	Quantity
Agarose		1%
1X TAE	Used for making gel, running buffer, and dilutions of samples	50 mL
EtBr	For post-staining	n/a
Ladder* (premixed with dye)	(brand; size)→	6 µL
6X Loading Dye	1 ul dye for 5 ul DNA	** **X**µL
DNA samples	See below chart for details	* µL

*For fragments ≤1kb, use NEB 2-log ladder for clearer visualization of fragment size.

$$(X\mu L) = \frac{\mu L\, sample}{4}$$

Lane 1	Lane 2	Lane 3	Lane 4	Lane 5	Lane 6	Lane 7	Lane 8	Lane 9	Lane 10

Procedure:

Critical Steps:

- Swirl agarose to make sure that all is melted (but not too vigorously to avoid bubbles)

The following is for a 1% Gel

Measure 0.5 g agarose and add to flask

Add 50 mL 1X TAE to the flask

Cover flask with saran wrap (should be on top of the microwave)

Microwave the agarose for 1:00, or until all agarose is dissolved and the solution is completely clear and bubbling

- If the agarose is still suspended/undissolved, microwave for additional 10-20 seconds
- CAREFUL, bottle will be extremely hot, watch out for steam coming from the bottle, hot gloves should be by the microwave

Obtain gel tray, box, and comb, then rinse with dH2O

- Comb size depends on experiment

Place gel tray in gel box sideways – the tray's rubber gasket should make a watertight seal against the gel box

- Make sure the gasket hasn't derailed

Insert gel comb

Pour hot agarose solution carefully into mold

Use a sterile pipette tip to sweep bubbles away from the important parts of the gel, then cover the gel while it cools to prevent debris from falling in

Prepare DNA samples with dye & appropriate volume (at least 200 ng for visualization, avoid more than 1 ug if you need to distinguish between similarly sized fragments)

When agarose has completely solidified, gently pull tray out of box, rotate tray, then re-insert tray so the wells are on the black side

Pour 1X TAE into the box until it just covers the lanes

Record locations of samples, load accordingly, and run at 100 V for 50 mins (alternatively, 80V for 60-75 mins)

Soak in EtBr bath for 20-30 mins then image according to posted instructions